



PATENT
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8-20-03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application Of:) A DISTRIBUTED STEREO SYSTEM
)
LEONARD COLIN ANDREWS)
) Examiner: Minsum Oh Harvey
Serial No.: 09/485,657)
)
Filed: March 24, 2000) Art Unit: 2644

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APPELLANT'S BRIEF ON APPEAL

Mail Stop Appeal Briefs - Patent
Commissioner for Patents
Box 1450
Alexandria, Virginia 22313-1450

Sir:

This brief is submitted in furtherance of the Notice of Appeal filed on June 5,

2003.

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REAL PARTY IN INTEREST

The real party in interest is LeisureTech Electronics Pty. Ltd. The assignee of the
above-referenced application.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

37 CFR 1.8
CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop
Appeal Briefs - Patent, Commissioner for Patents, PO Box 1450, Alexandria, Virginia 22312-1450, on July 31, 2003

Ratle Heintz

STATUS OF CLAIMS

Claims 1-25 are pending in the application. Claims 1-19 are rejected and are at issue in this appeal. Claims 1-19 are set forth in the appendix attached hereto.

STATUS OF AMENDMENTS

No amendment has been filed subsequent to final rejection.

SUMMARY OF THE INVENTION

The present application relates to a distributed stereo audio system 1 including at least two speakers 2 and 3 connected to an amplifier 4. The amplifier 4 is housed in a standard electrical light switching housing in the same room as the speakers. See page 4, lines 20-23.

In another room, a source of audio signals 5 may comprise a CD player 6, a tape recorder 7, a VCR 8 and a source selector 9. A power supply 10 in the same room as these audio signal sources 5 provides power to the amplifier 4. See page 4, lines 24-26.

The amplifier 4 is connected to the signal sources 5 and to the power supply 10 by a category 5 four pair twisted cable 11. One of the twisted pairs 12 provides the right audio signal. Another twisted pair 13 provides the left audio signal. A third twisted pair 14 provides power from the power supply 10. The amplifier 4 amplifies the left and right standard line level signals and supplies them to the speakers 2 and 3, respectively. The amplifier 4 is controlled by a potentiometer 15 mounted on its fascia plate 16. See page 4, lines 27-35.

The amplifier 4 can be controlled by a handheld remote controller 17 which transmits infrared signals 18 to a receiver 19 mounted in the fascia plate 16. The fascia plate 16 may include

displays indicating status of the amplifier and components of the source. Infrared signals may be transmitted, before or after the modulation, from the amplifier 4 back to the source 5 using the fourth twisted pair 20 in the category 5 cable 11. The infrared signals may be used to control the source directly. See page 5, lines 1-11.

The amplifier 4 is designed around a single chip amplifier and has high input impedance enabling several amplifiers to be mounted in different rooms to amplify signals from the same sources 5 for speaker sets in each of the rooms. In each room the sound broadcast may be from the same source components or from different source components. Further, the amplification level may be different in each room. See page 5, lines 12-19.

ISSUES

1. Whether any of claims are obvious over “Multi-room High-Fi Takes Control of the Home” by Lloyd in view of “The Facts about FireWire” by Wickelgren. More particularly, does the combination result in the claimed invention and are the references properly combined.

GROUPING OF CLAIMS

Claims 1, 2, 3, 4, 7, 8, 9 and 17 stand or fall together. Claims 11-15 stand or fall together. Claims 5, 6, 10, 16, 18 and 19 are separately patentable.

ARGUMENT

Independent claim 1 specifies a distributed stereo audio system including two or more speakers for the broadcast of stereo audio signals, a source of stereo audio signals, a stereo amplifier to amplify stereo audio signals and drive the speakers and a mains operated electrical power supply

to provide power to the amplifier. The amplifier is located in the same room as the speakers and remote from the signal source and power supply. The amplifier is connected to the signal source and power supply by means of a category 5 four pair twisted cable which provides, in respective conductors of the twisted pairs, right channel audio signals from the signal source to the amplifier, left channel audio from the signal source to the amplifier and DC power from the power supplier to the amplifier.

None of the references, alone or in combination, discloses use of category 5 four pair twisted cable, or any similar cable, which carries signals sources to amplifiers in a stereo system and DC power from the power supply to the amplifier.

The Lloyd article describes a Knekt home entertainment system in which receivers are situated in each room and plug into a standard hi-fi system. As stated in the article, the system is designed to "...avoid laying bulky speaker cables throughout a house and pumping high-voltage currents across them from a centralized hi-fi system. Instead we send unamplified signals across the home on "balanced" cables, which avoids picking up interference from other household devices along the way."

The Wickelgren article discusses the FireWire electronic bus used with personal computer systems. The standard 1394 cable uses two twisted pairs for data signals and a pair of power wires. The power wires do not comprise a twisted pair. Moreover, as noted on page 22, the standard cables "should stretch no more than 4.5 meters between nodes."

Contrary to the statement in the rejection, there is no disclosure or suggestion in the

Lloyd article that the amplifier is located in a room remote from the power supply. The Gold article entitled "Linn Knekt Multi-Room System", also cited by the examiner, discusses the same Knekt system as does Lloyd. The Gold article states that the system uses four twisted pairs two of which carry balanced audio and two carry bi-directional control signals. As such, the referenced system does not disclose twisted cable carrying a power supply signal. In fact, the Lloyd article suggests to the contrary noting that the use of unamplified signals "avoids picking up interference from other household devices along the way.". As is apparent, a power supply signal could provide interference.

Appellant previously filed a Knekt system installation manual. This installation manual describes the Knekt system in the cited Lloyd article. Appellant refers to the paragraph in bold lettering at the bottom of page 6 of the installation manual which reads as follows:

Plan the wire route to AVOID (emphasis in original) running beside Mains/Power cables, appliances with motors, Dimmer switches, TV sets or anything that can produce Radio noise. We've seen Fans, Refrigerators and Dimmer switches totally confuse the system and degrade the sound!, so AVOID!!!!

Page 14, under the heading "Bypassing wall sockets." includes a statement that "Mains should be supplied via normal sockets in the cupboard and a normal power cord to the products." Moreover, at page 24, under the heading "ROOM INSTALLATION.", the instructions indicate that the audio input should be connected to the RJ45 sockets. It otherwise indicate that the user should "Wire up mains, (power amplifier if using the KNEKT line receiver) and speakers."

As is apparent from the installation manual for the KNEKT system, as well as

information previously provided, the KNEKT system not only does not teach delivering power on the same cable as the audio signals, the user is instructed to AVOID running the power in proximity to the audio signals.

The statement on page 3 of the final rejection that “The applicants argument is not persuasive because Lloyd as modified do disclose using twisted pair wires for signals (which would be for right and left channel audio signal) and two power wires for power” is not supportable. Particularly, there is no Lloyd “as modified”, other than the proposed modification. The proposed modification is contrary to the express teachings of the system described in the Lloyd article.

In contrast to the cited references, the invention defined by claim 1 is based on the realization that both stereo audio signals and appropriate power signals can be transmitted simultaneously through a category 5 four twisted pair cable in a distributed stereo audio system. This realization enables such distributed stereo audio systems to be commercially viable since the category 5 cable is readily available and requires no special hardware or software terminators. The invention is not obvious in that it would not generally be expected to be suitable because the high bandwidth twisted pairs are not expected to be able to carry power signals and if they were expected to be able to cope with power signals, the expectation is that they would cause interference in the accompanying, unshielded signal carrying pairs. It is surprising and inventive that this has turned out to be so in that the cable has proven to be highly suitable for this unexpected purpose.

Because the Wickelgren article does not discuss use of a twisted pair for providing a power supply signal, combining it with the Lloyd article would not result in the claimed invention.

Also, Wickelgren does not discuss use of audio signals. Audio signals are analog in nature, unlike the data signals in Wickelgren. Moreover, the combination is improper. The Lloyd article discusses a system in which transmitters and receivers are located in different rooms throughout a house. The Wickelgren article discloses interconnecting devices that are no more than 4.5 meters between one another. Indeed, the devices are intended to be located in close proximity to one another as part of a computer system as illustrated on page 20 of Wickelgren. As such, the references are not properly combined. Moreover, the Lloyd article teaches away from transmitting power in its cable so that one skilled in the art would not consider the teachings of Wickelgren to be relevant for this reason as well.

Claim 5 depends from claims 1, 2 or 3 and specifies that the amplifier is based on an integrated circuit amplifier. Lloyd references that it uses an amplifier. However, there is no detail disclosure regarding the substance of the amplifier. The illustrations in Lloyd show a receiver unit as a desk mounted type unit. Claim 5 is believed allowable for this reason as well.

Claim 6 depends from claim 5 and specifies that the amplifier is constructed to fit into a standard electrical light switch housing. Lloyd discloses a receiver unit as a desk mounted type unit. While the remote control (RCU) can be mounted to a wall, there is no disclosure or suggestion that the amplifier is in the RCU. Having it in the RCU would serve no purpose. Claim 6 is believed allowable for this reason as well.

Claim 10 depends from claim 9 which specifies that a handheld remote control is provided to transmit infrared signals to a receiver monitor with the amplifier. Claim 10 specifies that

the amplifier is mounted with a speaker. Neither of the references disclose or suggest that an amplifier is mounted with a speaker. Instead, Lloyd suggests in its illustration that the amplifier is a separate stereo component. Claim 10 is believed allowable for this reason as well.

Claim 11 depends from claim 9 and specifies that the amplifier is mounted inside a standard electrical light fitting and a fascia plate includes the infrared receiver. As discussed above, Lloyd does not disclose or suggest that the RCU includes an amplifier. Claim 11 is believed allowable for this reason as well.

Claim 16 depends from claim 1 and specifies that the amplifier accepts standard line level signals from the audio source components. Lloyd states that unamplified signals are sent across the line. This suggests that standard line level signals are not sent from the audio source components. Claim 16 is believed allowable for this reason as well.

Claim 18 depends from claim 1 and specifies that the amplifier includes a switchable muting system. There is no disclosure or suggestion of any switchable muting system in either of the cited references. Claim 18 is believed allowable for this reason as well.


Claim 19 depends from claim 1 and specifies that the amplifier includes an adjustable input level trim device. Neither of the references disclose or suggest the amplifier including an adjustable input level trim device. Claim 19 is believed allowable for this reason as well.

SUMMARY

Summarizing, no combination of the cited references results in the claimed invention. Moreover, the combination is improper. For this reason, each of the claims 1-19 is believed

allowable and reversal of the rejection is requested.

Respectfully submitted,


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Dated: July 31, 2003

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APPENDIX

1. A distributed stereo audio system, including: two or more speakers for the broadcast of stereo audio signals, a source of stereo audio signals, a stereo amplifier to amplify stereo audio signals and drive the speakers, and a mains operated electrical power supply to provide power to the amplifier; where the amplifier is located in the same room as the speakers, and remote from the signal source and power supply; and where the amplifier is connected to the signal source and power supply by means of a category 5 four pair twisted cable which provides, in respective conductors of the twisted pairs, right channel audio signals from the signal source to the amplifier, left channel audio from the signal source to the amplifier and DC power from the power supply to the amplifier.

2. A distributed stereo audio system according to claim 1, wherein amplifier and speaker sets in several rooms receive signals from a single source of audio signals.

3. A distributed stereo audio system according to claim 1, wherein the source provides a selection of components, such as radio or CD, and different audio signals are provided to different rooms.

4. A distributed stereo audio system according to claims 1, 2 or 3, wherein the volume is set differently in each room.

5. A distributed stereo audio system according to claim 1, 2, or 3, wherein the amplifier is based on an integrated circuit amplifier.

6. A distributed stereo audio system according to claim 5, wherein the amplifier is constructed to fit into a standard electrical light switch housing.

7. A distributed stereo audio system according to claim 1, 2 or 3, wherein the amplifier output level is controlled by the output level of the source components.

8. A distributed stereo audio system according to claim 1, 2 or 3, wherein a manual volume control is included with the amplifier.

9. A distributed stereo audio system according to claim 1, 2 or 3, wherein a hand-held remote control is provided to transmit infrared signals to a receiver mounted with the amplifier.

10. A distributed stereo audio system according to claim 9, wherein the amplifier is mounted with a speaker.

11. A distributed stereo audio system according to claim 9, wherein the amplifier is mounted inside a standard electrical light fitting having a fascia plate that includes an infrared

receiver.

12. A distributed stereo audio system according to claim 11, wherein the fascia plate also includes status indicators for the amplifier and the audio signal source components.

13. A distributed stereo audio system according to claim 9, 11 or 12, wherein infrared signals received by the amplifier are transmitted to the source components through a fourth twisted pair in the category 5 cable.

14. A distributed stereo audio system according to claim 13, wherein the signals are modulated before transmission to an infrared emitter which directly controls the audio components.

15. A distributed stereo audio system according to claim 13, wherein the signals are demodulated and provided as data signals to the audio components.

16. A distributed stereo audio system according to claim 1, wherein the amplifier accepts standard line level signals from the audio source components.

17. A distributed stereo audio system according to claim 1, wherein the amplifier accepts speaker signals from another amplifier.

18. A distributed stereo audio system according to claim 1, wherein the amplifier includes a switchable muting system.

19. A distributed stereo audio system according to claim 1, wherein the amplifier includes an adjustable input level trim device.